DoD Fuze IPT/Technology Roadmap

Anthony J. Kress

Staff Specialist

OUSD(AT&L)

Defense Systems, Land Warfare & Munitions

OUSD (AT&L)/DS/LW&M
Room 3B1060
3090 Defense Pentagon
Washington, DC 20301-3090

(703) 695-7756
DSN 225-7756
Fax (703) 614-3496
E-Mail: tony.kress@osd.mil

Outline

- Formation of DoD Fuze IPT
- Where are We?
- Definitions
- IPT Communications with Industry
- Strategic Plan
- Where are We Going?

Formation of DoD Fuze IPT

- Director, Strategic & Tactical Systems, established the DoD Fuze IPT on June 28th, 2001

Tasks were:

- Identify issues affecting the current fuze industrial and technology base
- Determine what is required for a DoD fuze industrial and technology base
- Develop a strategy for re-shaping the fuze base to meet

Where are We?

- Established Baseline Definitions for fuzing system, fuze industrial and technology base.
- Identified Issues (see CURRENT SITUATION for each of the goals of the Strategic Plan).
- Established a Strategic Plan (contains Goals, Objectives and Action Items for each).
- Created three subgroups via Strategic Plan:
  - Roadmapping – Led by Mr. Scott Teel (Chief, AFRL, Eglin AFB).
  - Technology – Led by Mr. Lawrence Fan (NSWC Indian Head).
  - Joint Service Munitions Power Source – Led by Mr. Felix Cruz (USA Picatinny).
- Tasked Defense Contract Management Agency (DCMA) to conduct an IB assessment of the munitions fuze manufacturers this effort will

Definitions

Fuzing System (Source: NATO STANAG 4187)

A system designed to:

a. Provide as a primary role the safety and arming functions necessary to preclude munition arming before the desired position or time.

b. Sense a target or respond to one or more prescribed conditions, such as elapsed time, pressure, or command.

Definitions cont.

Fuze Industrial Base

The Industrial Base is defined as those entities, Government and private, domestic and international, that are actively involved in the design, development, qualification and/or production of fuze systems, and associated equipment to include setters. Included in the Fuze Industrial Base are those entities who supply components essential to the functioning of the fuze systems such as Safety and Arming devices, explosives, power supplies, electronics, sensors, fuze initiators, cables and lanyards.

Fuze Technology Base

The Technology Base is defined as those entities, Government and private, domestic and international,

involved in basic research, applied research, and

IPT Communications with Industry

- Letters to Industry.
  - August 1st, 2001 letter –covering the establishment of the DoD Fuze IPT
  - November 29th, 2001 letter – brief update of the Department's initiative for improving the fuze technology and industrial base
  - February 11, 2002 letter – requesting industry input on the effects of existing munitions export/import policies on the domestic base
  - November 25th, 2002 letter – requesting industry input on DoD's weapon system safety design policies and approval procedures
  - August 8th, 2003 – requesting industry clarify the specific issues of FMS for munitions/munitions fuzes and provide recommended solutions
  - March 26th, 2004 letter – requesting industry provide FMS examples: (1) where unacceptably long process times caused the company to lose the income or profits; (2) where a sale will result in a financial lost to industry because the Government will issue the foreign country fuzes from the current U.S. inventory.
- DoD Fuze IPT conducted an Advanced Planning Briefing for Industry (APBI) and Industrial Base

Strategic Plan

- Fuze Industrial Base Strategic Plan
  - Goal #1: Advance and maintain a healthy U.S. contractor base
    - ✓ 6 Objectives with action items for each objective
  - Goal #2: Ensure that the Government develops and maintains the capability to execute its responsibility to assure the safety and suitability for service of fuze systems
    - ✓ 4 Objectives with action items for each

Strategic Plan

- Fuze Technology Base Strategic Plan
  - Goal #1: Advance and maintain a healthy U.S. fuze technology base
    - ✓ 4 Objectives with action items for each objective
  - Goal #2: Foster an early, strong and continued Government involvement in the development, application and transition of fuze technology to munitions development
    - ✓ 3 Objectives with action items for each objective.

Where are We Going?

- Implementation of DoD Strategic Plan for the Fuze Technology & Industrial Base.
  - Brief the Plan to senior leadership within OS
  - Continue to work action items.
- Refine the Fuze Acquisition and Technology Road Ma
  - Acquisition Roadmap – identified IPT leads responsible for updating fuze acquisition data within the roadmap.
    - Established Ad-HOC group to develop a more detailed plan with milestones associated with this data – feedback will be provided to Service PMs.
  - Technology Roadmap - complete technology assessment for fuzing.
    - Prioritize technology effort and start the process of obtaining funding.
- Conduct DoD Fuze Summit with Service Acquisition Executive staff in Jan/Feb ’04. Develop individual or bundled acquisition strategies. Completion Date – April for POM 06-11 and Summer ’04 for PB06.

This meeting has not been scheduled, yet -- IPT needs to complete analysis.

Backups

Strategic Plan

Fuze Industrial Base

DoD Fuze IPT

Goal #1: Advance and maintain a healthy U.S. contractor base

CURRENT SITUATION/ISSUE: The health of the U.S. fuze industrial base is of concern to the DoD. The base has declined from approximately 36 to fewer than 10 end-item suppliers since 1987. The remaining firms represent a mix of primarily production houses, and a few that can also design and develop fuze systems. Most firms rely on continuing production contracts to remain in business. Most have small engineering departments that are not capable of resolving all production or development problems. The current situation is detrimental to National Security and Readiness. Current acquisition decisions are made without regard to the health of the domestic fuze production base. Further, misapplication of acquisition reform strategies has led to an increase in total cost of

Strategic Plan

Fuze Industrial Base

Goal #1: Advance and maintain a healthy U.S. contractor base

Objectives:

- Ensure that U.S. import and export policy on munitions does not threaten domestic suppliers (Foreign sources should provide offsets to U.S. base).
- Enhance and sustain National capabilities for development and production of fuze systems.
- Promote an environment that enables domestic fuze suppliers to have sufficient fiscal, infrastructure and human resources to meet DoD requirements.

Strategic Plan

Fuze Industrial Base

Goal #1: Advance and maintain a healthy U.S. contractor base

Objectives (cont.):

- Actively promote competition in all phases of fuze acquisition, including critical components, within the U.S. munitions industrial base to achieve a desired outcome of multiple sources.

- Enhance and sustain the Government laboratory system capability to respond and support SDD and production.

- Promote a full service capability so that fuze contractors possess the technical breadth/experience necessary to

Strategic Plan

Fuze Industrial Base

- Goal #2: Ensure that the Government develops and maintain the capability to execute its responsibility to assure the safety and suitability for service of fuze systems.

CURRENT SITUATION/ISSUE: Currently, the Government does not adequately influence/participate in fuze system and component design, development and production. Reductions in munitions R&D and procurement throughout the 1990s forced a reduction in the number of skilled fuze technical personnel in both Government and Industry. In addition, Service implementation of acquisition reform or streamlining practices has led to: (1) heavy and frequently inappropriate reliance on prime contractors for responsibility for safety critical items; (2) a trend that reduces or precludes Government involvement in the design and development of fuze systems. This trend has led to questionable design of fuze systems that PMs have presented to the Service

Strategic Plan

Fuze Industrial Base

Goal #2: Ensure that the Government develops and maintains
the capability to execute its responsibility to assure
the safety and suitability for service of fuze systems.

Objectives:

- The Government will maintain control over safety and reliability of fuze systems.

- All acquisition programs will require a fuze system level 3 or equivalent TDP as a deliverable for Government ownership (to include, where possible, level 3 or equivalent TDP for critical source controlled items such as batteries).

Strategic Plan

Fuze Technology Base

DoD Fuze IPT

Goal #1: Advance and maintain a healthy U.S. fuze technology base

CURRENT SITUATION/ISSUE: The current fuze technology base does not adequately support fuze technology insertion across all of the Services. The base has suffered a significant decline in expertise and facilities at Government laboratories, due to the resulting fuze technology funding limitations and mandated personnel cutbacks. The overall U.S. fuze technology base is eroding. There has been little recognition within DoD regarding the sophistication and complexity of fuze systems, and it remains an afterthought in weapon system design and development. Concurrently, the post-Cold War posture of decreased fuze production programs and quantities have resulted in a dramatic reduction in the reinvestment of fuze technology in IRAD. The DoD investment policy and philosophy has resulted in the inability to pursue multiple and alternative technology solutions. Investments are targeted toward specific near term system transitions with little regard for revolutionary and high leverage technology initiatives. There is little, and in some cases no, block funding to address these crucial long-term needs. The compounded effects of: (1) limited awareness; (2) acquisition strategies directed toward perceived low risk/off-the-shelf capabilities; and (3) the years of under-investment has resulted in the lack of enabling technologies for timely insertion in order to realize future munitions requirements. In addition to the direct effect on future enabling fuze

Strategic Plan

Fuze Technology Base

Goal #1: Advance and maintain a healthy U.S. fuze technology base

Objectives

- Develop and maintain a detailed National technology plan/program that identifies where DoD needs to be making long-term investments.

- Obtain funding to execute the technology plan.

- Foster collaboration in the development of the selected fuze technologies (DoD, DOE, Industry, & Academia).

- Obtain Senior DoD level recognition and acknowledgement of the critical need for a coherent and sustained program of advancement in fuze technology.

Strategic Plan

Fuze Technology Base

DoD Fuze IPT

Goal #2: Foster an early, strong and continued Government involvement in the development, application and transition of fuze technology to munitions development.

CURRENT SITUATION/ISSUE: The private sector does not make sufficient technology investments and does not have the capability or infrastructure to perform the necessary tech base advancements to support the development of future fuze systems. The private sector relies on the DoD to provide the technology insertions for future fuze systems. The DoD has the capability and infrastructure, though declining and expected to decline further, to develop future fuze applications. The lack of funding for fuze technology base has placed the DoD in a reactionary mode, which in turn has placed the fuze development on the critical path or behind weapon systems development. In response to this lack of technology insertion, the Department

Strategic Plan

Fuze Technology Base

Goal #2: Foster an early, strong and continued Government involvement in the development, application and transition of fuze technology to munitions development.

Objectives:

- Ensure an adequate stabilized Government fuze technology base.

- Strengthen the teaming relationships between "Government to Government" and "Government to Private" sector.

- Ensure that the Government S&T fuze technology transitions